

Statement of Adverse Energy Impact
Programmatic Environmental Assessment
Geothermal Leasing and Exploration Shoshone-Eureka Planning Area
Geothermal Leasing and Exploration
NV063-EA02-16

DESCRIPTION OF ACTION/DECISION:

1. Location: Entire Shoshone-Eureka Planning Area open to leasing
2. Date: September 5, 2002
3. General Description: Leasing and exploration in the Shoshone-Eureka Planning Area.
4. Acres impacted: Approximately 4.3 million

RATIONALE FOR DECISION (POLICY, REGULATION OR LAW):

The analysis in the EA shows that the Proposed Action, would have the least impact to resources while allowing for the timely processing of geothermal lease applications of the alternatives. The Proposed Action also has the least adverse energy impact of the alternatives.

OTHER ALTERNATIVES CONSIDERED:

(Listed in order of increased adverse energy impact)

No Action Alternative: Under this alternative, geothermal leasing and exploration would have been guided by the “*Regional Environmental Analysis on Geothermal Leasing in the Shoshone Resource Area*” and the “*Regional Environmental Analysis on Geothermal Leasing in the Eureka Resource Area*.” There would be no change in the actual permitted action from that of the proposed action. This alternative has an adverse energy impact by not expediting the permitting process. Further, this alternative does not comply with the direction of the President (Executive Order 133212) and the recommendations of the National Energy Development Group (Appendix One, Page 10, Chapter 6, Recommendation 5).

Designating Geothermal Leasing and Exploration Areas: One alternative would be to limit geothermal leasing and exploration, and therefore subsequent development, to specific locations within the Planning Area. Due to the lack of research, surveys, and inventories necessary to designate areas for geothermal leasing and exploration within the 4.3 million acres of the Planning Area, this alternative would have taken a substantial amount of time and subsequently had an adverse energy impact.

Limiting Geothermal Leasing and Exploration: Another alternative would be to limit the number of geothermal leases granted in the Planning Areas and also limit exploration so as not to exceed a certain threshold. Due to the wide range of exploration options and the variability of impacts associated with such exploration, a threshold cannot be established on the Planning Area wide level. Site-specific NEPA analysis would be required to define such thresholds. This would require time and potentially exclude energy development from certain areas.

Denial of Geothermal Leases: The final alternative considered would be the denial of geothermal leasing in the Shoshone-Eureka Planning Area. This alternative would have the greatest adverse energy impact prohibiting any geothermal energy development.

ENERGY IMPACT (DEVELOPMENT, PRODUCTION OR TRANSMISSION):

Specific stipulations for the protection of resources could potentially have an adverse energy impact. These specific stipulations limit the timing and proximity of certain activities, including exploration, development and production, related to energy production. The Authorized Officer, in accordance with

laws and regulations, may waive these stipulations.

These stipulations are:

Resource	Stipulation
Air Quality	The operator will implement at the direction of the Assistant Field Manager testing of emissions for H ₂ S and other noxious / deadly gases where there is indication that these gases may occur.
Cultural-Historical Resources	Cultural resources shall be avoided and mitigation measures shall be developed on a case-by-case basis as required by regulations, lease terms and attached stipulations developed during site specific NEPA analysis.
Native American Religious Concerns	As surface disturbing activities occur, the BLM will require the operator to monitor the water temperature and outflow or water from local hot springs and existing wells as directed by the Assistant Field Manager. If the temperature and outflow from the spring or well were impacted to a degree determined by the Assistant Field Manager to be more than negligible, the BLM shall require the operator to take corrective actions. Failure of the operator to take the corrective measures as directed will result in BLM terminating the operation.
Special Status Species	<p>The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. The special status species list is reviewed and / or updated annually and as species are added, new stipulations may add further restrictions. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 <u>et seq.</u>, including completion of any required procedure for conference or consultation.</p> <p>Exploratory endeavors on the public lands will require a Special Status Species review, and may, at the direction of the Assistant Field Manager, require a field survey for the presence of Special Status Species. Potential impacts to Special Status Species will be analyzed on a case-by-case basis. Mitigation measures shall be developed on an individual project basis depending upon the results of the survey.</p> <p>Springs within ½ mile of exploration activities shall be inventoried by BLM approved and supervised personnel for the presence of invertebrates. If a rare genus, such as <i>Pyrgulopsis</i>, is found, identification to species and monitoring of effects of the proposed action shall be required and site-specific mitigation may be developed by the BLM.</p> <p>Sage grouse: BLM will require operations to avoid active leks (strutting grounds) by 2 miles during strutting season (see Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Nevada, October 2000). Approximate dates: March 1 - May 15</p> <p>Operations shall avoid nesting and brood rearing habitat (especially riparian habitat where broods concentrate beginning usually in June) by ½ mile during the time such areas are in use. Approximate dates: April 1 - August 15</p>

Resource	Stipulation
	<p>BLM will require operations to avoid sage grouse wintering habitat by ½ mile, while occupied. Most known wintering grounds in the Shoshone-Eureka Resource Area occur at high elevations and are not likely to be affected. Avoidance dates will vary with severity of the winter.</p> <p>BLM will limit the disturbance to and fragmentation of all known sage grouse habitat.</p> <p>Ferruginous hawks: Operations shall avoid active nests by ½ mile. Approximate dates: March 15 - July 1</p>
Hydrology and Water Quality and Quantity	<p>All applicants for exploration permits will be required to submit a surface water inventory to the Assistant Field Manager before authorization may be granted. The inventory will include a map of appropriate scale (such as 1:24,000) indicating the location of all surface water on public land within ½ mile radius from the surface-disturbing activity.</p> <p>At the commencement of surface disturbing activities for the drilling of exploration wells, the BLM will require that the drilling company monitor the water temperature and outflow of water from local springs and existing wells as directed by the Assistant Field Manager. If the temperature and / or outflow of the water from the spring or well were impacted to a degree determined by the Assistant Field Manager to be more than negligible, the BLM will require the operator to take corrective actions. Failure of the operator to take the corrective measures as directed will result in BLM terminating the operation.</p> <p>Results will be reported to Federal and State agencies on the status of these hydrologic systems during drilling.</p> <p>Impacts include, but are not limited to, the following: Change in water temperature Change in discharge rate Substantial decrease in water table level Surface subsidence</p> <p>In the event of impacts to surface or subsurface waters, determined by the Assistant Field Manager to be more than negligible, or if a violation of Federal or State water quality standards occurs, the Assistant Field Manager will assess the situation, and may require the operator to amend, relocate or discontinue operations. If operations are terminated, the BLM will develop and the operator shall implement remediation measures.</p> <p>Additional stipulations may include: No use of the surface water; Limitations on the type of equipment that may be used; and Restrictions of activities during certain times of the year (seasonal restrictions).</p>
Wetlands / Riparian Zones	<p>BLM will direct the operator to avoid surface waters, wetlands and riparian areas. No exploration activities will occur within 100 feet of surface waters, wetlands or riparian areas.</p> <p>Vegetation shall not be disturbed within 300 feet of waters designated by the</p>

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	<p>Authorized Officer, except at approved stream crossing.</p> <p>Where surface waters, wetlands and riparian areas cannot be avoided (100 feet for non-surface disturbing exploration activities and 300 feet for surface disturbing exploration activities), mitigation will be developed on a case-by-case basis.</p> <p>Additional stipulations may include: No use of the surface water; Limitations on the type of equipment that may be used; and Restrictions of activities during certain times of the year (seasonal restrictions).</p> <p>The BLM will require that the drilling company monitor the temperature and outflow of water from local hot springs. If the temperature and / or outflow of water from a spring were impacted to a degree determined by the Assistant Field Manager to be more than negligible, the BLM will require the operator to take corrective action. Failure of the operator to take the corrective measures as directed will result in BLM terminating the operation.</p>
Invasive Nonnative Species	<p>Areas to be involved in surface disturbing activities will be inventoried for the presence of invasive, nonnative species and treated if present.</p> <p>The exterior of all vehicles and heavy equipment shall be cleaned by water before entering public lands to do work. To minimize the possibility for contamination, a designated wash area will be designated by the BLM and shall be established and monitored by the operator in high use areas.</p> <p>The boots of operators and other person working in the areas shall be cleaned of seed before coming onto BLM lands.</p> <p>The BLM will develop and the operator shall implement a weed treatment program from the time operation commences until the site is abandoned.</p> <p>Seed and mulch used to reclaim disturbed areas shall be free of invasive nonnative species.</p> <p>Operators and workers shall avoid driving through or parking in areas where invasive nonnative species occur.</p> <p>When sites are abandoned, they will be inventoried for the presence of invasive nonnative species and treated if present.</p>
Land Use Authorizations	<p>BLM will require proposals to avoid existing rights-of-way where possible.</p> <p>Proposed leases shall not overlap existing land use authorizations if they would adversely affect the valid existing authorization.</p>
Allotment Management	<p>If operations cause a water source to become unavailable to livestock, the Authorized Officer will require a new well to be drilled, or another water development to be constructed in the general area to provide adequate water for livestock.</p> <p>If the lease area is within an allotment, the Assistant Field Manager may require additional measures, including seasonal restrictions or no surface occupancy.</p>
Recreation	None identified.
Soils	None identified.
Vegetation	<p>Disturbed areas will be reseeded with native or introduced plant species, depending on the site conditions. Disturbed areas will be reseeded with pure live seed (certified weed free) with the mixes in Appendix F. Native vegetation will be used wherever possible. However, to compete with invasive nonnative species, introduced species, as suggested in the seed list in Appendix F, will be used.</p>
Visual Resources	None identified.

Resource	Stipulation
Migratory Birds	The BLM will limit the amount of ground clearing or other disturbance (such as the creation of cross-country access to drill sites) that an operator may do during the migratory bird nesting season. Areas to be disturbed shall be surveyed by personnel approved and supervised by BLM to determine the existence and location of any nests. If any nests are located, the nest will be avoided by ¼ mile. If the nest area cannot be avoided, BLM will develop site-specific mitigation.
Wildlife	<p>If operations cause a water source to become unavailable to wildlife, the Authorized Officer will require a new well to be drilled, or another water development to be constructed in the general area to provide adequate water for wildlife.</p> <p>If the lease area is within a wildlife management area, the Assistant Field Manager may require additional measures, including seasonal restrictions or no surface occupancy.</p>
Wild Horses and Burros	<p>If operations cause a water source to become unavailable to wild horses, the Authorized Officer may require a new well to be drilled, or another water development to be constructed in the general area to provide adequate water for the wild horses.</p> <p>If the lease area is within a HMA, the Assistant Field Manager may require additional stipulations for the protection of wild horses and burros, including seasonal restrictions or no surface occupancy.</p>
All Resources	Operators shall adhere to all Standard Operating Procedures as outlined in this EA, unless specifically waived by the Assistant Field Manager.
Playa	Because playas are important recreational places apt to have cultural sites nearby and provide critical habitat for some migratory waterbirds and shorebirds, including Special Status Species such as the Snowy Plover, mitigation measures will be developed on a case-by-case basis. Mitigation may include, but is not limited to, no surface occupancy and seasonal restrictions.

AUTHORIZED OFFICER/BLM JURISDICTIONAL OFFICE:

Gail G. Givens
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Battle Mountain Field Office

Date